



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 121, 125, and 135

[Docket No.: FAA-2012-1059; Amdts. No.: 121-368, 125-63, 135-128]

RIN 2120-AK11

Minimum Altitudes for Use of Autopilots

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This rulemaking amends and harmonizes minimum altitudes for use of autopilots for transport category airplanes; it also enables the operational use of advanced autopilot and navigation systems by incorporating the capabilities of current and future autopilots, flight guidance systems, and Global Navigation Satellite System (GNSS) guidance systems while protecting the continued use of legacy systems at current autopilot minimum use altitudes. Additionally, this final rule implements a performance-based approach, using the certified capabilities of autopilot systems as established by the Airplane Flight Manual (AFM) or as approved by the Administrator.

DATES: Effective [insert date 60 days after date of publication in the Federal Register].

ADDRESSES: For information on where to obtain copies of rulemaking documents and other information related to this final rule, see “How To Obtain Additional Information” section of this document.

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this action, contact Kel O. Christianson, FAA, Aviation Safety Inspector, Performance

Based Flight Systems Branch (AFS-470), Flight Standards Service, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone 202-385-4702; e-mail Kel.christianson@faa.gov.

For legal questions concerning this action, contact Robert H. Frenzel, Manager, Operations Law Branch, Office of the Chief Counsel, Regulations Division (AGC-220), Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone 202-267-3073; e-mail Robert.Frenzel@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for this Rulemaking

The FAA's authority to issue rules on aviation safety is found in Title 49 of the United States Code. This rulemaking is promulgated under the authority described in 49 U.S.C. 106(f), which establishes the authority of the Administrator to promulgate regulations and rules and 49 U.S.C. 44701(a)(5), which requires the Administrator to promulgate regulations and minimum standards for other practices, methods, and procedures necessary for safety in air commerce and national security. This amendment to the regulation is within the scope of that authority because it prescribes an accepted method for ensuring the safe operation of aircraft while using autopilot systems.

I. Overview of Final Rule

The FAA amends and harmonizes minimum altitudes for use of autopilots for transport category airplanes in order to streamline and simplify these operational rules. This final rule enables the operational use of advanced autopilot and navigation systems by incorporating the capabilities of existing and future autopilots, flight guidance systems, and GNSS guidance systems while protecting the continued use of legacy

systems. This allows the FAA to enable the benefits of Next Generation Air Transportation System (NextGen) technologies and procedures (Optimized Profile Descents, Performance Based Navigation (PBN)) to enhance aviation safety in the National Airspace System (NAS). This final rule also gives the FAA Administrator the authorization to require an altitude higher than the AFM if the Administrator believes it to be in the interest of public safety.

Currently, operators have a choice whether or not to update their aircraft with new autopilots as they are developed and certified by equipment manufacturers. This final rule does not affect this decision-making process and protects operators to continue operating as they do today. As a result, this action does not impose any additional costs on certificate holders that operate under parts 121, 125, or 135. Also, by setting new minimum altitudes for each phase of flight that approved equipment may operate to, this final rule gives manufacturers more certainty that new products can be used as they are developed.

In response to Executive Order 13563 issued by President Obama on January 18, 2011, this rule was identified for inclusion in the Department of Transportation Retrospective Regulatory Review (May 2011), noting that the current minimum altitudes for use of autopilots were unduly restrictive and would limit the ability to use new technologies. On May 10, 2012, President Obama signed Executive Order 13610, establishing the Retrospective Regulatory Review as an on-going obligation. The final rule is consistent with the requirement in Executive Order 13610 to modify or streamline regulations “in light of changed circumstances, including the rise of new technologies.”

II. Background

A. Statement of the Problem

The FAA and Civil Aeronautics Administration (CAA) (the predecessor to the FAA) technical standards for autopilot systems date back to 1947. These standards have been revised eight times since 1959, but the operating rules for autopilot minimum use altitudes in 14 Code of Federal Regulations (14 CFR) §§ 121.579, 125.329, and 135.93 have not been amended in any significant way since the recodification of the Civil Aviation Regulations (CAR) and Civil Aviation Manuals (CAM) on December 31, 1964.

By contrast, autopilot certification standards contained in 14 CFR § 25.1329 were updated as recently as April 11, 2006. Consequently, operational regulations in parts 121, 125, and 135 do not adequately reflect the capabilities of modern technologies in use today and thus make it difficult to keep pace with the FAA's implementation of NextGen.

B. History

The FAA published an NPRM in the **Federal Register** on December 9, 1994 (59 FR 63868) based on a recommendation from the Autopilot Engagement Working Group of the Aviation Rulemaking Advisory Committee (ARAC) to change the existing rules concerning engagement of autopilots during takeoff. The ARAC determined that the increased use of an autopilot during takeoff would enhance aviation safety by giving pilots greater situational awareness of what was going on inside and outside of the aircraft. This benefit would be realized by reducing the task loading required to manually fly the aircraft during the critical takeoff phase of flight. The FAA received seven comments in response to the NPRM, and all commenters supported an amendment to the rule.

In 1997, the FAA amended §§ 121.579, 125.329, and 135.93 to permit certificate holders the use of an approved autopilot system for takeoff, based on the 1994 NPRM and an expectation that autopilot technology would continue to advance (62 FR 27922; May 21, 1997). This authorization was given to certificate holders through an Operations Specification (OpSpec), which was implemented as a stopgap measure. The rule itself was not changed to provide manufacturers and operators the guidance for producing and operating new aircraft capable of attaining lower autopilot minimum use altitudes. The amendment also failed to address autopilot minimum use altitudes on instrument approaches or harmonize 14 CFR parts 121, 125 and 135.

C. ARAC Efforts To Amend Autopilots Rules

Since 1997, multiple groups have been formed to review current regulations and autopilot technologies. The FAA Transport Airplane Directorate initiated an effort under the ARAC Flight Guidance Harmonization Working Group to evaluate the status of current autopilot technologies, rules and guidance along with the harmonization of U.S. policy and guidance with the Joint Aviation Authorities. Later, the Performance-based operations Aviation Rulemaking Committee, which established the Autopilot Minimum Use Height (MUH) action team, evaluated autopilot minimum use altitudes and made recommendations to the Associate Administrator for Aviation Safety. The team was specifically tasked with developing recommendations to address progress in the area of PBN and the subsets of area navigation (RNAV) and required navigation performance (RNP) operations. The team's conclusions aligned with the previous groups' acknowledgement that §§ 121.579, 125.329 and 135.93 were outdated and recommended new rulemaking to take advantage of advancements in modern aircraft technologies and

the certified capabilities of autopilot systems to create a performance-based structure to aid in the implementation of NextGen flight operations.

D. Summary of the NPRM

The FAA published an NPRM in the Federal Register on December 4, 2012 (77 FR 71735), proposing to enable the operational use of advanced autopilot and navigation systems by incorporating the capabilities of current and future autopilots, flight guidance systems, and GNSS guidance systems while protecting the continued use of legacy systems. The NPRM proposed to accomplish this through a performance-based approach, using the certified capabilities of autopilot systems as established by the Airplane Flight Manual (AFM) or as approved by the Administrator. The comment period closed on February 4, 2013.

E. General Overview of Comments

The FAA received 3 public comments. The National Business Aviation Association (NBAA) provided one comment supporting the rule. The second commenter focused on the definitions and terms used in the regulatory text and the third commenter requested a clarification of the regulatory text.

III. Discussion of Public Comments and Final Rule

A. Revise Minimum altitudes for use of autopilot (§ 121.579, 125.329 and 135.93)

A commenter suggested that Threshold Elevation (THRE) be added to the definition of TDZE to read, “touchdown zone/threshold elevation” (TDZE). The suggestion was made based on the fact that, at the time of the NPRM, TDZEs were being replaced with THREs on instrument approach plates (IAPs) in the NAS. This resulted in instrument approach plates published with either a TDZE or THRE. The comment was

suggested so that the rule would reference both terms, thus allowing both terms to be used by the pilots as a reference for adding the applicable altitudes or heights published in the AFM.

The policy to change TDZE to THRE has been rescinded. TDZE will now be the standard and will replace THRE on IAPs that are currently published with THRE. Based on this, the FAA has decided that TDZE will remain the only term used in this final rule. As a result, this final rule will allow operators to add the applicable altitudes or heights published in the AFM to the airport elevation and TDZE published on the instrument approach plate. This will provide a standard reference for all operators and manufacturers using and producing Flight Management Systems (FMS).

The third commenter suggested clarifying the regulatory text as it related to the base minimum use altitude for an approach and how §§ 91.175 and 91.155 weather conditions are used when applying autopilot minimums. The FAA agrees with the comment and has clarified this particular section. Specifically, the FAA has realigned the regulatory text and placed into separate paragraphs the specific conditions that must be met in order to apply the autopilot minimums.

This final rule is a complete rewrite of §§ 121.579, 125.329 and 135.93. The language in each section of the regulations is identical except for an additional paragraph in § 135.93 exempting rotorcraft. This final rule harmonizes these three parts of 14 CFR because this final rule is based on the performance capabilities of the equipment being utilized, not the operating certificate held. Nothing in this final rule will prevent or adversely affect the continued safe operation of aircraft using legacy navigation systems.

Furthermore, this action defines altitude references for the different phases of flight, whereas the original rule defined all altitudes with reference to terrain. Altitudes for takeoff/initial climb and go-around/missed approach are defined as above the airport elevation. Altitudes for enroute operations are defined as above terrain elevation. Altitudes used for approach are defined as being above Touchdown Zone Elevation (TDZE). If the altitude is in reference to a Decision Altitude/Height (DA(H)) or Minimum Descent Altitude (MDA), the altitude will be defined in relation to the DA(H) or MDA itself (e.g. 50 ft. below DA(H)). Upon further review of the proposed regulatory text, the FAA is removing subparagraph (a)(4) from each of these sections. The language “Altitudes defined as being above airport elevation, TDZE or terrain are above ground level (AGL)” as proposed in the NPRM is redundant. The provisions defining the altitude references in subparagraphs (a)(1), (a)(2) and (a)(3) are sufficient to define the elevations that will be used to calculate the autopilot minimum use height/altitude for each phase of flight.

This final rule is formatted to model the actual phases of flight: takeoff through landing or go-around/missed approach. Each paragraph in this final rule has a base minimum autopilot use altitude for the intended phase of flight that all aircraft may utilize. In order to protect the use of all legacy systems, the base altitudes will remain identical to the altitudes in the current rule. Lower minimum use altitudes are based on certification of the autopilot system and limitations found in the AFM. The enroute minimum use altitude will not change from the current rule. Additionally, the minimum use altitude in each paragraph can be raised by the Administrator if warranted by an operational or safety need.

No other comments were received on these three sections and they are adopted as proposed.

B. Takeoff and Initial Climb (§§ 121.579 (b), 125.329(b) and 135.93(b))

The current rule defines the base minimum altitude at which all aircraft may engage the autopilot after takeoff as 500 ft. or double the autopilot altitude loss (as specified in the AFM) above the terrain, whichever is higher. The current rule also gives the Administrator the authority to use OpSpecs to authorize a lower minimum engagement altitude on takeoff, which must be specified in the AFM.

This final rule retains the same minimum altitudes for all aircraft to protect legacy systems and introduces the ability to use a lower engagement altitude on takeoff/initial climb based upon the certified limits of the autopilot as specified in the AFM. This final rule also gives the Administrator the authority to specify an altitude above, but not below, that specified in the AFM.

As a result, this final rule establishes the AFM as a performance-based standard by which a certificate holder may be authorized for operations through its OpSpecs. Once an autopilot's capabilities and limitations are certified and reflected in the AFM, a certificate holder may request a change to its OpSpecs to authorize use of the new autopilot minimum use altitude specified in the AFM. No comments were received on these three sections and they are adopted as proposed.

C. Enroute (§§ 121.579(c), 125.329(c) and 135.93(c))

The enroute paragraph of the current rule specifies a minimum use altitude of 500 ft. above terrain, or an altitude that is no lower than twice the autopilot altitude loss specified in the AFM, whichever is higher, for all operations. This final rule maintains

the same base minimum use altitude as the current rule, while granting the Administrator the authority to specify a higher altitude if required by an operational or safety related need.

No comments were received on these three sections and they are adopted as proposed.

D. Approach (§§ 121.579(d), 125.329(d), 135.93(d))

The base minimum use altitude for an approach in this final rule will remain the same as the current rule. Aircraft with a specified height loss may use an autopilot no lower than 50 ft. below the DA (H) or MDA or twice the altitude loss specified in the AFM, whichever is greater. The current rule allows for exceptions to this altitude with the use of a coupled autopilot, instrument landing system (ILS), and specified reported weather conditions.

This final rule is written to allow current operators the ability to operate as they do now (thereby protecting legacy systems), while also allowing operators with updated systems to attain lower minimum use heights. If an operator has an approved autopilot that can fly a coupled approach, ILS or other than the ILS, it may use the AFM specified “altitude loss” or Administrator directed height as the basis for disconnecting the autopilot on the approach. In instrument flight rules (IFR) conditions or operations in less than visual flight rules (VFR), the aircraft is below the MDA or DA and pilot has § 91.175 references, the disengage height remains “altitude loss plus 50 ft.” In VFR conditions, the operator may use the “altitude loss” as the disengage height or 50 ft., whichever is higher. This final rule allows the aircraft to be used down to a lower minimum use height based on the AFM limitation and the ability of the pilot to

immediately recognize a possible autopilot deviation by using visual references outside the aircraft.

No other comments were received on these three sections and they are adopted as proposed. Sections 121.579(d), 125.329(d), and 135.93(d) appear in the final rule with the changes as described for paragraphs (d)(1).

E. Go Around/Missed Approach (§§ 121.579(e), 125.329(e) and 135.93(e))

The final rule provides guidance for executing a missed approach/go-around that the current rule lacks. This guidance is first presented in the approach paragraph, wherein an aircraft does not need to comply with the autopilot minimum use altitude of that paragraph provided it is executing a coupled missed approach/go-around. A new subparagraph provides guidance on when the autopilot can be engaged on the missed approach/go-around when accomplished.

No comments were received on these three sections and they are adopted as proposed.

F. Landing (§§ 121.579(f), 125.329(f) and 135.93(f))

The last paragraph in this final rule provides guidance for landing. Current language authorizes the Administrator, through OpSpecs, to allow an aircraft to touchdown with the autopilot engaged using an approved autoland flight guidance system. This authorization relies upon an ILS to meet this requirement. This final rule states that minimum use altitudes do not apply to autopilot operations when an approved and authorized landing system mode is being used for landing. This final rule will not limit approved landing systems to ground based systems. This action will allow new

performance based landing systems to be approved and implemented for autoland operations as they become available.

No comments were received on these three sections and they are adopted as proposed.

G. Rotorcraft Operations (§ 135.93(g))

The current rule expressly excludes rotorcraft operations from the minimum altitudes for use of autopilots. This final rule continues to exclude rotorcraft operations.

No comments were received on § 135.93(g), and it appears as proposed.

IV. Regulatory Notices and Analyses

A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Public Law 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, this Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually

(adjusted for inflation with base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this final rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost impact is so minimal that a proposed or final rule does not warrant a full evaluation, this order permits that a statement to that effect, and the basis for it, be included in the preamble if a full regulatory evaluation of the cost and benefits is not prepared. A full regulatory evaluation was not prepared for this final rule. The reasoning for this determination follows:

Benefits

This final rule incorporates the capabilities of current autopilots and will allow operators to more readily utilize the capabilities of future autopilots, flight guidance systems, and GNSS guidance systems as they are developed. These new capabilities accelerate the benefits of NextGen technologies and procedures that depend upon auto flight guidance systems to enhance aviation safety in the NAS. If operators pursue the lower minimum altitudes based on their autopilots' certification, they will realize benefits from increased ability to operate.

Costs

This final rule specifies autopilot minimum use altitudes for parts 121, 125 and 135 operators. This final rule is based on the capabilities of the aircraft and the minimum use altitudes or lack of minimum use altitudes published in the AFM. This final rule does not affect the minimum use altitudes presently used by operators in the NAS. Operators have the option to operate as they currently do or pursue the proposed lower minimum

use altitudes based on their aircraft's autopilot certification. Operators with approved autopilots and wishing to immediately achieve the lower minimum use altitudes may incur the cost of accelerated training. This voluntary accelerated training cost is a change in present value, but not in total cost, because this type of training would have occurred in the future. Additionally, operators will not incur certification costs for aircraft, avionics equipment, autopilot and flight management systems that have already been certificated. Also, by setting new minimum altitudes for each phase of flight that approved equipment might operate to, this final rule gives manufacturers more certainty that new products can be used as they are developed.

The FAA recognizes that autopilots in some older airplanes are not approved to utilize the lower minimum use altitudes. These operators will not incur any additional costs unless they seek new autopilot certifications. However, the FAA does not believe the majority of operators of older aircraft will seek to modify their aircraft in order to be approved for the lower minimum use altitudes. The FAA did not receive any public comments in response or contradiction to these findings. Due to the voluntary provisions of the rule, there are no quantifiable cost reductions.

The FAA has, therefore, determined that this final rule does not qualify as a "significant regulatory action" as defined in section 3(f) of Executive Order 12866, and is not "significant" as defined in DOT's Regulatory Policies and Procedures.

B. Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Public Law 96-354) (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational

requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration”. The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA. However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides that the head of the agency may so certify and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

In the initial regulatory flexibility analysis, the FAA stated the rule would not impose additional cost, because operators could choose to operate as they currently do. The FAA did not receive any public comments in response or contradiction to this finding. Therefore, as provided in section 605(b), the head of the FAA certifies that this rulemaking will not result in a significant economic impact on a substantial number of small entities.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Public Law 96-39), as amended by the Uruguay Round Agreements Act (Public Law 103-465), prohibits Federal agencies from

establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this final rule and determined that it is relieving, thus will not create unnecessary obstacles to the foreign commerce of the United States.

D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of \$100 million or more (in 1995 dollars) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action." The FAA currently uses an inflation-adjusted value of \$143.1 million in lieu of \$100 million. This final rule does not contain such a mandate; therefore, the requirements of Title II of the Act do not apply.

E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA has determined that there is no new requirement for information collection associated with this final rule.

F. International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has determined that there are no ICAO Standards and Recommended Practices that correspond to these proposed regulations.

Executive Order 13609, Promoting International Regulatory Cooperation, promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and to reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policies and agency responsibilities of Executive Order 13609, and has determined that this action would have no effect on international regulatory cooperation.

G. Environmental Analysis

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 312f and involves no extraordinary circumstances.

V. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this final rule under the principles and criteria of Executive Order 13132, Federalism. The agency determined that this action will not have a substantial direct effect on the States, or the relationship between the Federal

Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, does not have Federalism implications.

B. Executive Order 13211, Regulations that Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this final rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The agency has determined that it is not a “significant energy action” under the executive order and it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

VI. How To Obtain Additional Information

A. Rulemaking Documents

An electronic copy of a rulemaking document may be obtained by using the Internet —

1. Search the Federal eRulemaking Portal (<http://www.regulations.gov>);
2. Visit the FAA’s Regulations and Policies Web page at http://www.faa.gov/regulations_policies/ or
3. Access the Government Printing Office’s Web page at <http://www.gpo.gov/fdsys/>.

Copies may also be obtained by sending a request (identified by notice, amendment, or docket number of this rulemaking) to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-9680.

B. Comments Submitted to the Docket

Comments received may be viewed by going to <http://www.regulations.gov> and following the online instructions to search the docket number for this action. Anyone is able to search the electronic form of all comments received into any of the FAA's dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.).

C. Small Business Regulatory Enforcement Fairness Act

The Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 requires FAA to comply with small entity requests for information or advice about compliance with statutes and regulations within its jurisdiction. A small entity with questions regarding this document, may contact its local FAA official, or the person listed under the FOR FURTHER INFORMATION CONTACT heading at the beginning of the preamble. To find out more about SBREFA on the Internet, visit http://www.faa.gov/regulations_policies/rulemaking/sbre_act/.

List of Subjects

14 CFR Part 121

Air carriers, Aircraft, Airmen, Aviation safety, Safety, Transportation.

14 CFR Part 125

Aircraft, Airmen, Aviation safety.

14 CFR Part 135

Air taxis, Aircraft, Airmen, Aviation safety.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends chapter I of title 14, Code of Federal Regulations as follows:

**PART 121--OPERATING REQUIREMENTS: DOMESTIC, FLAG, AND
SUPPLEMENTAL OPERATIONS**

1. The authority citation for part 121 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40113, 40119, 41706, 44101, 44701–44702, 44705, 44709–44711, 44713, 44716–44717, 44722, 46105.

2. Revise § 121.579 to read as follows:

§ 121.579 Minimum altitudes for use of autopilot.

(a) *Definitions.* For purpose of this section—

(1) Altitudes for takeoff/initial climb and go-around/missed approach are defined as above the airport elevation.

(2) Altitudes for enroute operations are defined as above terrain elevation.

(3) Altitudes for approach are defined as above the touchdown zone elevation (TDZE), unless the altitude is specifically in reference to DA (H) or MDA, in which case the altitude is defined by reference to the DA(H) or MDA itself.

(b) Takeoff and initial climb. No person may use an autopilot for takeoff or initial climb below the higher of 500 feet or an altitude that is no lower than twice the altitude loss specified in the Airplane Flight Manual (AFM), except as follows—

(1) At a minimum engagement altitude specified in the AFM; or

(2) At an altitude specified by the Administrator, whichever is greater.

(c) *Enroute.* No person may use an autopilot enroute, including climb and descent, below the following—

- (1) 500 feet;
 - (2) At an altitude that is no lower than twice the altitude loss specified in the AFM for an autopilot malfunction in cruise conditions; or
 - (3) At an altitude specified by the Administrator, whichever is greater.
- (d) *Approach*. No person may use an autopilot at an altitude lower than 50 feet below the DA(H) or MDA for the instrument procedure being flown, except as follows—
- (1) For autopilots with an AFM specified altitude loss for approach operations—
 - (i) An altitude no lower than twice the specified altitude loss if higher than 50 feet below the MDA or DA(H);
 - (ii) An altitude no lower than 50 feet higher than the altitude loss specified in the AFM, when the following conditions are met—
 - (A) Reported weather conditions are less than the basic VFR weather conditions in § 91.155 of this chapter;
 - (B) Suitable visual references specified in § 91.175 of this chapter have been established on the instrument approach procedure; and
 - (C) The autopilot is coupled and receiving both lateral and vertical path references;
 - (iii) An altitude no lower than the higher of the altitude loss specified in the AFM or 50 feet above the TDZE, when the following conditions are met—
 - (A) Reported weather conditions are equal to or better than the basic VFR weather conditions in § 91.155 of this chapter; and
 - (B) The autopilot is coupled and receiving both lateral and vertical path references; or
 - (iv) A greater altitude specified by the Administrator.
 - (2) For autopilots with AFM specified approach altitude limitations, the greater of—

- (i) The minimum use altitude specified for the coupled approach mode selected;
 - (ii) 50 feet; or
 - (iii) An altitude specified by Administrator.
- (3) For autopilots with an AFM specified negligible or zero altitude loss for an autopilot approach mode malfunction, the greater of—
- (i) 50 feet; or
 - (ii) An altitude specified by Administrator.
- (4) If executing an autopilot coupled go-around or missed approach using a certificated and functioning autopilot in accordance with paragraph (e) in this section.
- (e) *Go-Around/Missed Approach.* No person may engage an autopilot during a go-around or missed approach below the minimum engagement altitude specified for takeoff and initial climb in paragraph (b) in this section. An autopilot minimum use altitude does not apply to a go-around/missed approach initiated with an engaged autopilot. Performing a go-around or missed approach with an engaged autopilot must not adversely affect safe obstacle clearance.
- (f) *Landing.* Notwithstanding paragraph (d) of this section, autopilot minimum use altitudes do not apply to autopilot operations when an approved automatic landing system mode is being used for landing. Automatic landing systems must be authorized in an operations specification issued to the operator.

**PART 125—CERTIFICATION AND OPERATIONS: AIRPLANES HAVING A
SEATING CAPACITY OF 20 OR MORE PASSENGERS OR A MAXIMUM**

**PAYLOAD CAPACITY OF 6,000 POUNDS OR MORE; AND RULES
GOVERNING PERSONS ON BOARD SUCH AIRCRAFT**

3. The authority citation for part 125 is revised to read as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40113, 44701–44702, 44705, 44710–44711, 44713, 44716–44717, 44722.

4. Revise § 125.329 to read as follows:

§ 125.329 Minimum altitudes for use of autopilot.

(a) *Definitions.* For purpose of this section—

(1) Altitudes for takeoff/initial climb and go-around/missed approach are defined as above the airport elevation.

(2) Altitudes for enroute operations are defined as above terrain elevation.

(3) Altitudes for approach are defined as above the touchdown zone elevation (TDZE), unless the altitude is specifically in reference to DA (H) or MDA, in which case the altitude is defined by reference to the DA(H) or MDA itself.

(b) *Takeoff and initial climb.* No person may use an autopilot for takeoff or initial climb below the higher of 500 feet or an altitude that is no lower than twice the altitude loss specified in the Airplane Flight Manual (AFM), except as follows—

(1) At a minimum engagement altitude specified in the AFM; or

(2) At an altitude specified by the Administrator, whichever is greater.

(c) *Enroute.* No person may use an autopilot enroute, including climb and descent, below the following—

(1) 500 feet;

(2) At an altitude that is no lower than twice the altitude loss specified in the AFM for an autopilot malfunction in cruise conditions; or

(3) At an altitude specified by the Administrator, whichever is greater.

(d) *Approach*. No person may use an autopilot at an altitude lower than 50 feet below the DA(H) or MDA for the instrument procedure being flown, except as follows—

(1) For autopilots with an AFM specified altitude loss for approach operations—

(i) An altitude no lower than twice the specified altitude loss if higher than 50 feet below the MDA or DA(H);

(ii) An altitude no lower than 50 feet higher than the altitude loss specified in the AFM, when the following conditions are met—

(A) Reported weather conditions are less than the basic VFR weather conditions in § 91.155 of this chapter;

(B) Suitable visual references specified in § 91.175 of this chapter have been established on the instrument approach procedure; and

(C) The autopilot is coupled and receiving both lateral and vertical path references;

(iii) An altitude no lower than the higher of the altitude loss specified in the AFM or 50 feet above the TDZE, when the following conditions are met—

(A) Reported weather conditions are equal to or better than the basic VFR weather conditions in § 91.155 of this chapter; and

(B) The autopilot is coupled and receiving both lateral and vertical path references; or

(iv) A greater altitude specified by the Administrator.

(2) For autopilots with AFM specified approach altitude limitations, the greater of—

- (i) The minimum use altitude specified for the coupled approach mode selected;
 - (ii) 50 feet; or
 - (iii) An altitude specified by Administrator.
- (3) For autopilots with an AFM specified negligible or zero altitude loss for an autopilot approach mode malfunction, the greater of—
- (i) 50 feet; or
 - (ii) An altitude specified by Administrator.
- (4) If executing an autopilot coupled go-around or missed approach using a certificated and functioning autopilot in accordance with paragraph (e) in this section.
- (e) *Go-Around/Missed Approach.* No person may engage an autopilot during a go-around or missed approach below the minimum engagement altitude specified for takeoff and initial climb in paragraph (b) in this section. An autopilot minimum use altitude does not apply to a go-around/missed approach initiated with an engaged autopilot. Performing a go-around or missed approach with an engaged autopilot must not adversely affect safe obstacle clearance.
- (f) *Landing.* Notwithstanding paragraph (d) of this section, autopilot minimum use altitudes do not apply to autopilot operations when an approved automatic landing system mode is being used for landing. Automatic landing systems must be authorized in an operations specification issued to the operator.

**PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON DEMAND
OPERATIONS AND RULE GOVERNING PERSONS ON BOARD SUCH
AIRCRAFT**

5. The authority citation for part 135 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g), 41706, 40113, 44701–44702, 44705, 44709, 44711–44713, 44715–44717, 44722, 45101–45105.

6. Revise § 135.93 to read as follows:

§ 135.93 Minimum altitudes for use of autopilot.

(a) *Definitions.* For purpose of this section—

(1) Altitudes for takeoff/initial climb and go-around/missed approach are defined as above the airport elevation.

(2) Altitudes for enroute operations are defined as above terrain elevation.

(3) Altitudes for approach are defined as above the touchdown zone elevation (TDZE), unless the altitude is specifically in reference to DA (H) or MDA, in which case the altitude is defined by reference to the DA(H) or MDA itself.

(b) *Takeoff and initial climb.* No person may use an autopilot for takeoff or initial climb below the higher of 500 feet or an altitude that is no lower than twice the altitude loss specified in the Airplane Flight Manual (AFM), except as follows—

(1) At a minimum engagement altitude specified in the AFM; or

(2) At an altitude specified by the Administrator, whichever is greater.

(c) *Enroute.* No person may use an autopilot enroute, including climb and descent, below the following—

(1) 500 feet;

(2) At an altitude that is no lower than twice the altitude loss specified in the AFM for an autopilot malfunction in cruise conditions; or

- (3) At an altitude specified by the Administrator, whichever is greater.
- (d) *Approach*. No person may use an autopilot at an altitude lower than 50 feet below the DA(H) or MDA for the instrument procedure being flown, except as follows—
- (1) For autopilots with an AFM specified altitude loss for approach operations—
- (i) An altitude no lower than twice the specified altitude loss if higher than 50 feet below the MDA or DA(H);
- (ii) An altitude no lower than 50 feet higher than the altitude loss specified in the AFM, when the following conditions are met—
- (A) Reported weather conditions are less than the basic VFR weather conditions in § 91.155 of this chapter;
- (B) Suitable visual references specified in § 91.175 of this chapter have been established on the instrument approach procedure; and
- (C) The autopilot is coupled and receiving both lateral and vertical path references;
- (iii) An altitude no lower than the higher of the altitude loss specified in the AFM or 50 feet above the TDZE, when the following conditions are met—
- (A) Reported weather conditions are equal to or better than the basic VFR weather conditions in § 91.155 of this chapter; and
- (B) The autopilot is coupled and receiving both lateral and vertical path references; or
- (iv) A greater altitude specified by the Administrator.
- (2) For autopilots with AFM specified approach altitude limitations, the greater of—
- (i) The minimum use altitude specified for the coupled approach mode selected;
- (ii) 50 feet; or
- (iii) An altitude specified by Administrator.

(3) For autopilots with an AFM specified negligible or zero altitude loss for an autopilot approach mode malfunction, the greater of—

(i) 50 feet; or

(ii) An altitude specified by Administrator.

(4) If executing an autopilot coupled go-around or missed approach using a certificated and functioning autopilot in accordance with paragraph (e) in this section.

(e) *Go-Around/Missed Approach*. No person may engage an autopilot during a go-around or missed approach below the minimum engagement altitude specified for takeoff and initial climb in paragraph (b) in this section. An autopilot minimum use altitude does not apply to a go-around/missed approach initiated with an engaged autopilot. Performing a go-around or missed approach with an engaged autopilot must not adversely affect safe obstacle clearance.

(f) *Landing*. Notwithstanding paragraph (d) of this section, autopilot minimum use altitudes do not apply to autopilot operations when an approved automatic landing system mode is being used for landing. Automatic landing systems must be authorized in an operations specification issued to the operator.

(g) This section does not apply to operations conducted in rotorcraft.

Issued under authority provided by 49 U.S.C. 106(f) and 44701(a)(5) in Washington, DC, on December 24, 2013.

Michael P. Huerta
Administrator

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